



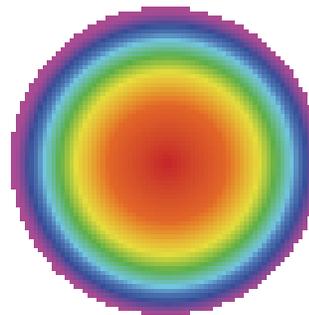
## Encircled Flux Multimode Adapter

# Latest Standard Compliant **Fiber** Certification

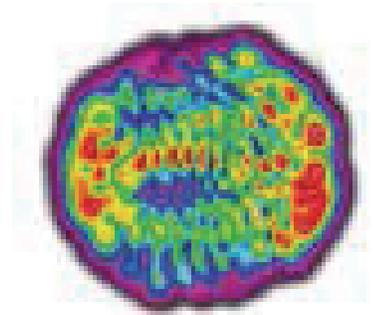
The new generation of Multimode Fiber Adapters adds full standards compliant fiber certification capability to the WireXpert series of testers. A light source and power meter are used to measure the power loss and length of optical cables at 850 and 1300 nm. Certification of multimode fibers has often been a contentious issue due to the inherent

uncertainties in the measurement process. ISO/IEC and TIA have recently adopted an Encircled Flux (EF) standard that defines the launch condition for the light sources used in multimode test equipment. The WireXpert's new EF compliant adapters give you guaranteed compliance to the EF standard IEC 61280-4-1.

- Compliant to IEC- 61280-4-1 EF standards and IEC-14763-3
- Provides validation to different modal behaviors of various fiber optic manufacturers
- Interchangeable robust SC, LC and ST adapter for EF kit
- Provides troubleshooting with built-in Visual Fault Locator (VFL)
- Improves repeatability of measurements
- Reduces insertion loss variation between laboratory and field instruments



EF compliant light source  
with WireXpert



non compliant light source  
with other certifier

## EF Compliance with Modally Transparent Cord

The standards require the EF compliance to be guaranteed at the end of the launch cord. To meet this requirement, WireXpert's innovative method of using modally transparent launch cords enables the retention of the EF compliance to the end of the launch cord.

These modal transparent launch cords are readily available by most manufacturers and are a more cost effective solution compared to alternatives which would require special components attached to the launch cords.



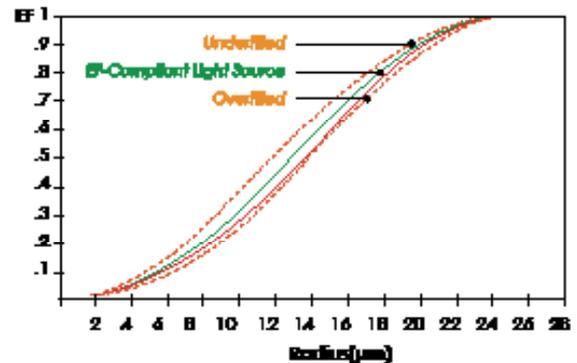
EF Compliant

WireXpert is EF compliant all the way from the source

## What is Encircled Flux?

Optical signals that carry information in multimode cabling do so in a variety of modes. Modal behavior is dependent on factors such as the diameter of the core (which determines the numerical aperture), the wavelength of the light source, and launch condition of the light source (overfilled or under-filled). Multi mode fibers used for communication typically have a core diameter of 50 or 62.5µm as compared to Single-mode which has a diameter of 9µm. Due to the wide diameter of the core in multimode fiber cables, the amount of light that gets coupled from the light source is large, resulting in poor repeatability and high insertion loss variability between different measurement instruments.

Encircled Flux is a metric defined as the integration of intensity of light coupled into the fiber as a function of the radial distance from the center of the core. It is important to define the upper and lower bounds for the Encircled Flux to produce reproducible launch conditions. The IEC 61280-4-1 standard defines these two parameters and when a curve-fitting is done with these numbers, it will result in the familiar EF template graph as shown



Encircled Flux (EF) template

in the figure. The upper boundary refers to more light is getting coupled closer to the center of the core. The lower boundary is due to more light getting coupled further away from the center of the core. Therefore, the launch condition should stay between the upper and the lower boundaries of the graph in order to be considered as EF-compliant.

Ordering Information
<b>WX_AD_EF_MM2</b> Encircled flux compliant multimode fiber adapter set (850nm and 1300nm). Includes a pair of FC-SC modally transparent test cords, a pair of SC-SC tail cords and cleaning kit
<b>WX_AC_LC_EF_MM_CORDKIT</b> LC test cord kit for EF-compliant multimode adapter. Includes a pair of modally transparent FC-LC test cords, a pair of LC-LC simplex tail cords, a pair of interchangeable LC adapters and a pair of LC-LC duplex adapters
<b>WX_AC_EF_MM_REFCORD_SC2</b> A pair of modally transparent FC-SC test reference cords and a pair of SC-SC tail cords
<b>WX_AC_MM_ST_KIT</b> A pair of EF MM 50µm FC to ST Reference cords, A pair of ST to ST MM 50 mm Reference Cord, 2 qty ST Adapter

Technical Specifications (Light Source 850 & 1300nm)	
Power	-16 ~ -20 dBm
Spectral Width	±15 nm
EF Compliance	IEC 61280-4-1
Source Type	LED
<b>RECEIVER</b>	
Dynamic Range	12 dB
Power Meter Sensitivity	-40 dB
Power Meter Resolution	0.1 dB
<b>VISUAL FAULT LOCATOR</b>	
Wavelength	650 µm
Power	0 dBm



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